Journal of
Risk and Financial Management

MDPI

Article

EU Country and EFTA Country Export Differences

Guðmundur Kristján Óskarsson * and Helga Kristjánsdóttir

Faculty of Business Administration, University of Akureyri, Borgum, Norðurslóð 2, 600 Akureyri, Iceland; helga@unak.is
* Correspondence: gko@unak.is; Tel.: +354-460-8616

Abstract: This research seeks to analyze the export differences facing countries in the EU and EFTA. This is firstly to analyze the effects on international trade of the trade bloc of the European Union (EU), and secondly the European Free Trade Association (EFTA), and provide a comparison of these two. This research seeks to analyze exports determinants to answer these two questions. There are two countries selected for this study, the small EFTA country Iceland, and the large EU country UK, before BREXIT. We apply a gravity model in our econometric analysis, with exports dependent on the gross domestic product, population, and geographic distance. We estimate these effects on the exports of both the UK and Iceland in separate equation systems. We conclude that exports from the UK, before BREXIT, are more negatively affected by geographical distance than exports for the EFTA country Iceland, when corrected for gross domestic product and population size.

Keywords: UK; EU; international trade; geographic distance

Citation: Óskarsson, Guðmundur Kristján, and Helga Kristjánsdóttir. 2021. EU Country and EFTA Country Export Differences. *Journal of Risk and Financial Management* 14: 147. https://doi.org/10.3390/jrfm14040147

Academic Editor: Shigeyuki Hamori

Received: 3 March 2021
Accepted: 25 March 2021
Published: 31 March 2021

1. Introduction

The research question of interest here is if the UK's exports as a large EU country before BREXIT, and Iceland as a small EFTA country, are differently affected by economic and market size. Foreign direct investment (FDI) has grown substantially in recent decades (World Bank 2021) with internalization and growth in the world. To analyze FDI, we choose to look at the UK as an EU-country and Iceland as a non-EU-country (EFTA 2021; EU 2021).

UK and Iceland, with their Viking heritage, are interesting when considering international trade. Icelandic sagas tell about Viking activities in Iceland and the UK, involving settlement and takeovers. This current research looks at the recent financial crisis with the tide turning, coming in from the cold back into the stormy seas after the financial crisis, bringing international capital flows into these countries. The opening for flows, with the release of capital controls in Iceland, was like turning ice back to water (IMF 2018). Capital controls put some European countries in the ocean backwater, making them barely reachable by the international financial current (World Bank 2021; IMF 2018). Again, this takes us to the shores of the Atlantic Ocean to the UK and Iceland, considering them as EU and non-EU countries until the end of 2020 (EFTA 2021; EU 2021).

Before the economic crisis, the two countries of Iceland and Ireland were awash with foreign direct investment (FDI), indicating the market conditions and the political climate at the time (World Bank 2021; IMD 2021; Markusen 2004). Can we use the crisis experience for navigation through the current rough waters in Europe? Smooth sea never made a skilled sailor. What can other governments learn from the aftermath of the financial crisis (World Bank 2021; IMF 2021)? It may have potential futuristic implications, translating into other markets. Going back to the Iceland–UK saga, then the two countries have skilled labor endowments and similarity in resources based on the fishing grounds off their shores (World Bank 2021). Country endowments can be relevant in economic recovery since their resources help to attract FDI (Kristjánsdóttir and Karlsdóttir 2020; Kristjánsdóttir and Kristjánsdóttir 2021). Europe has been increasingly migrating towards skilled labor economies, having an impact on their cultures (Davies et al. 2008), and therefore, the culture

factor is accounted for in this research. Culture indicates distance, but both countries are European geographic outliers, with Iceland possibly suffering more from its location since it is so much further away from markets (Markusen 2004; Davies and Kristjánsdóttir 2010). To find out if EU membership is beneficial at times of economic crisis, we ran regressions on the periods before and after the crisis for both countries and then compared them. We found the receiving country's size and wealth to determine exports, rather than a specific type of trade bloc membership.

2. Literature

The framework of international economics and international business seeks to explain the driving forces of international business, how it has general international economic effects along the lines of standard international economics (Krugman et al. 2014). This framework has become increasingly common for researchers to analyze international trade and investment (Markusen 2004).

The journey begins by analyzing terms of trade, and of paramount importance to us is the difference in the forces behind foreign direct investment (FDI) and international trade; the facts drive the theory. Oguledo and Macphee (1994) find international trade to increase as countries are geographically closer to one another.

In essence, this story analyzes economic geography (Krugman 1991) and presents theory and empirics based on gravity. Tinbergen (1962) and Pöyhönen (1963) developed the gravity equation. The gravity equation explains exports as a function of the gross domestic product of countries and the distance between them (Larue and Mutunga 1993). The laws of physics cannot be changed; the theory applies gravity's pull to explain some of the forces in the business landscape (Bergstrand 1985).

When building a bridge between continents, national culture is important. The cultural ties in the global economy help to bind the continents together, and this may be illustrated with cultural impacts on international trade. Helpman and Krugman (1989) relate international trade with increasing returns and imperfect competition. We seek to establish a relationship between these variables, with researchers like Markusen (2004) explaining determinants of trade and FDI.

In the last decades, we have seen the world trade system gravitate toward trade blocs, with the European Union (EU) being the flagship of Europe. Performance is estimated by evidence from regression analysis, allowing for testing OECD data (2018). When considering modes of entry into international markets, firms may choose between FDI and other forms of entering the market, like through licensing (Blonigen et al. 2003; Brainard 1997; Davies et al. 2010; Markusen 2004). Licensing is an indirect export when foreign corporations enter the local market through licensing, rather than direct exporting via a local distributor. FDI–trade has been estimated to complement or substitute one other, when considering the reverse and inverse effects, the result is quite accurate.

This current research analyzes how exports of UK and Iceland are differently affected by geographical distance measures (Distance Calculator 2018), as well as the economic size and market size, as measured by gross domestic product and population size in the trading partner countries (OECD 2018), as well as the population and gross domestic product in the UK and Iceland (OECD 2018). "The gravity concept is originated in physics, referring to Newton's law of gravity. Newton discovered the nature of gravity in his mother's garden in England 1666, (Keesing 1998) when analyzing the pulling force causing an apple fall to the ground. He named the pulling force gravity. The gravitational force between two objects is dependent on their mass and the distance between them. When the gravity model is applied to economics, exports correspond to the force of gravity, and gross domestic product corresponds to economic mass. In economics, the model is used to explain the driving forces of exports, i.e., what forces one country to export to another" (Kristjánsdóttir 2004). Economic researchers have in recent years applied the gravity model to economic analysis, using it to explain the flow of trade between countries, like countries' outgoing exports Bergstrand (1985). The features of the gravity model incorporate economic size and

geographical distance, along the lines of economic geography by Krugman (1991). This has been applied to explain the trading patterns of multinational corporations, multinationals as explained by Markusen (2004). A theoretical explanation for the gravity model when applied to commodities was provided by Anderson (1979).

The common presentation of the gravity equation is followed in this current research. The gravity model specifications used in economics and business are generally not tested for endogeneity, this is based on the evolvement of the gravity model. See the following text on the evolvement of the gravity model:

Newton's gravity model originates in physics, with the gravity force denoted as G, and the model presented as G = $Mass_1$*$Mass_2$/radius. The radius is then presented as distance, and logarithm is taken, so the equation becomes log (Gravity force) = log ($Mass_1$) + log ($Mass_2$) − log (Distance). When applying the gravity model in economics, the gravity force is the trading force; that is the flow of trade between $Mass_1$ and $Mass_2$. The gravity model has gained acceptance in economics. According to this model, the "masses" equal the economic weight of different economies (economy 1 and economy 2). More specifically, the economic weight is generally presented as the gross domestic product (GDP). As in physics, when the gravity force is stronger between larger masses, the trading force (flow of trade) is stronger between larger economies (with larger GDPs). Furthermore, like in physics, the gravity force is stronger when there is less distance between the two masses. Reversely, an increase in distance has a negative impact on the gravity force (the flow). This last fact corresponds with the last part of the equation, that is –log (distance).

3. Model Setup

Based on Newton's gravity model introduced in the literature section, the equation system can be presented as the following:

(i) log (Gravity force) = log ($Mass_1$) + log ($Mass_2$) − log (DISTANCE)

Along these lines, the presentation of the gravity model for trade goes as follows, replacing Mass with Economy size and logarithm with natural logarithm.

(ii) ln (Gravity force) = ln (Economy $weight_1$) + ln (Economy $weight_2$) − ln (DISTANCE)

Then, Economy weight is proxied with the overall size of the economy, measured with GDP.

(iii) ln (Gravity force) = ln (GDP_1) + ln (GDP_2) − ln (DISTANCE)

Then, the gravity force is proxied with trade, often exports, as the trading force between GDP_1 and GDP_2.

(iv) ln (Exports) = ln (GDP_1) + ln (GDP_2) − ln (DISTANCE)

For economists within international economics, this equation is widely accepted. Because the flow of foreign direct investment (FDI) can be regarded as one form of trade, it often replaces exports. Therefore, many have presented the equation in the following way:

(v) ln (FDI) = ln(GDP_1) + ln(GDP_2) − ln(DISTANCE)

The original notation applies to what is happening between Mass1 and Mass2, which can be notated econometrically as *i* and *j*, as Mass *i* and Mass *j*. Distance represents the distance between Mass *i* and Mass *j*, and distance is therefore noted as Distance *ij*. The foreign direct investment (FDI), flowing between *i* and *j* therefore is presented as FDI_{ij}. Then, the equation becomes

(vi) ln (FDI_{ij}) = ln (GDP_i) + ln (GDP_j) − ln ($DISTANCE_{ij}$)

Additionally, DISTANCE is shortened to DIS, and the econometric data often run overtime, this can be accounted for:

(vii) ln ($FDI_{ij,t}$) = ln ($GDP_{i,t}$) + ln ($GDP_{j,t}$) − ln (DIS_{ij})

Note that distance does not change over time, and therefore does not have the t notation.

More variables are added to the equation above, Equation (vii) dependent on the factors being analyzed.

The variables applied in this current research, explained in the equations, are defined in detail in Table 1.

Table 1. Variable Definition.

$UK\_Exports_{i,t}$	Exports of UK United Kingdom (i), over time (t). Exports is presented in US Dollar, USD. Obtained from the OECD (2018), on the webpage stats.oecd.org
$ICE\_Exports_{i,t}$	Exports of Iceland (i), over time (t). Exports is presented in US Dollar, USD. Obtained from the OECD (2018), on the webpage stats.oecd.org
$UK\_GDP_{i,t}$	Gross Domestic Product GDP over time (t) of the United Kingdom UK (i). Reported in US Dollars, current prices. Millions. Obtained from the OECD (2018), on the webpage stats.oecd.org
$ICE\_GDP_{i,t}$	Gross Domestic Product GDP Iceland (i) over time (t). Reported in US Dollars, current prices. Millions. Obtained from the OECD (2018), on the webpage stats.oecd.org
$OTH\_GDP_{i,t}$	Gross Domestic Product GDP of various OECD countries running over (j) over time (t), receiving exports from Iceland. Reported in US Dollars, current prices. Millions. Obtained from the OECD (2018), on the webpage stats.oecd.org
$UK\_POP_{i,t}$	Population. All ages. All persons. Annual. Obtained from the OECD (2018), on the webpage stats.oecd.org Running for the UK (i) over time (t).
$ICE\_POP_{i,t}$	Population. All ages. All persons. Annual. Obtained from the OECD (2018), on the webpage stats.oecd.org Running for Iceland (i) over time (t).
$OTH\_POP_{i,t}$	Population. All ages. All persons. Annual. Obtained from the OECD (2018), on the webpage stats.oecd.org Running for various OECD countries (i) over time (t).
UK_DIS_{ij}	UK distance is the distance from the UK (i) to other (j) countries. Measured as distance in km from United Kingdom capital city, London, to other capital cities of countries, except for that in the case of the US, New York is applied rather than Washington DC (Distance Calculator 2018).
ICE_DIS_{ij}	ICE distance is the distance from Iceland (i) to other (j) countries. Measured as distance in km from Iceland capital city, Reykjavik, to other capital cities of countries, except for that in the case of the US, New York is applied rather than Washington DC (Distance Calculator 2018).

The dataset covers exports from the UK to other OECD countries on the one hand and on the other hand, the exports from Iceland to other OECD countries. Data are based on the OECD database (OECD 2018), reporting the decomposition of exports to individual trading partner countries. The division of exports to individual OECD countries is reported on a yearly basis.

The countries included are the following OECD countries: Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea (Republic of South Korea), Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia (Slovak Republic), Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States. The time-period estimated runs from 1989 through 2012. STATA, a statistical software, was used for summary statistic and regressions. Regression with robust standard errors was applied to deal with the heteroskedastic problem (Hoechle 2007).

Summary statistics, including variable mean and variation, are shown in Table 2.

Table 2. Summary Statistics for the Sample of Data.

Variable	Obs	Mean	Std. Dev.	Min	Max
$UK\_Exports_{i,t}$	729	8.54×10^8	1.21×10^9	0	7.96×10^9
$ICE\_Exports_{i,t}$	663	7,164,404	1.10×10^7	8000	7.15×10^7
$UK\_GDP_{i,t}$	816	1,678,055	499,172.5	957,829.4	2,393,178
$ICE\_GDP_{i,t}$	816	8907.332	2675.094	5296.779	13,130.36
$OTH\_GDP_{i,t}$	804	909,283.9	1,965,752	5296.779	1.62×10^7
$UK\_POP_{i,t}$	816	5.92×10^7	1,640,366	5.71×10^7	6.29×10^7
$ICE\_POP_{i,t}$	782	284,236.2	21,770.73	252,746	319,355
$OTH\_POP_{i,t}$	814	3.41×10^7	5.34×10^7	252,746	3.14×10^8
UK_DIS_{ij}	816	3510.5	4633.357	0	18,800
ICE_DIS_{ij}	792	4258.364	3913.378	0	16,774

The total number of OECD countries in the data sample is 34 countries (OECD 2018). Data on Distance is obtained from the Distance Distance Calculator (2018).

Equation (1)

$$PX_{ij} = \beta_0 (Y_i)^{\beta_1} (Y_j)^{\beta_2} (D_{ij})^{\beta_3} (A_{ij})^{\beta_4} u_{ij} \quad (1)$$

Along the lines of Bergstrand (1985), the explanatory variable PX_{ij} in Equation (1) denotes export from country i to country j, over time t. Variable Y_i denotes the GDP of country i, and Y_j is the GDP of a country, and D_{ij} is the geographic distance (kilometres) between the economic centers of country i and country j. The factor A_{ij} denoted with the letter A presents the affected trade between country i and j, with u_{ij} being a log-normally distributed error term and E(ln u_{ij}) = 0.

Equation (1) is based on the basic Bergstrand (1985) Equation.

$$EXP_{ij,t} = e^{\gamma_0} (Y_{i,t})^{\gamma_1} (Y_{j,t})^{\gamma_2} (D_{ij})^{\gamma_3} (A_{ij})^{\gamma_4} e^{\zeta_{ij,t}} \quad (2)$$

Equation (2) offers the insertion of exports into the model, with the EXP variable. Furthermore, the A factor is replaced with a population variable. Moreover, when estimating the equation, we allow for two model specifications. One with the distance of Iceland, and one with the UK distance from other countries.

4. Estimation Results

We first analyzed the determinants of exports for the United Kingdom, uk_exp, as a function of the following variables: oth_gdp oth_pop uk_pop uk_gdp dis_uk. We found UK exports to be positively impacted by the GDP of "other countries", that is, the importing countries, however, not the UK GDP. UK exports are found to be negatively affected by the population size of the UK and the population of other countries, the importing countries. Regression estimates obtained are presented in Table 3.

Table 3. Regression for UK exports, using robust standard errors with variable treated by the logarithm function.

			Robust			
lnUKexp	**Coef.**	**Std. Err.**	**t**	**P > |t|**	**[95% Conf. Interval]**	
lnUKgdp	−0.462	0.192	−2.40	0.017 **	−0.8408	−0.0844
lnUKpop	−1.975	2.016	−0.98	0.328	−5.934	1.984
lnOTHgdp	1.922	0.0796	24.15	0.000 *	1.766	2.079
lnOTHpop	−1.137	0.0862	−13.19	0.000 *	−1.307	−0.968
lnDISuk	−0.521	0.0211	−24.69	0.000 *	−0.5633	−0.4804
_cons	59.854	33.733	1.77	0.076	−6.377	126.086
R-squared	=0.786					

* Significant at the 1 percent level. ** Significant at the 5 percent level.

Secondly, as reported in Table 4, we analyzed how the exports of Iceland ice_exp are affected by several variables, oth_gdp oth_pop ice_pop ice_gdp dis_ice.

Table 4. Regression for Iceland exports, using robust standard errors with variable treated with the logarithm function.

			Robust			
lnUKexp	**Coef.**	**Std. Err.**	**t**	**P > |t|**	**[95% Conf. Interval]**	
lnUKgdp	2.462	0.932	2.64	0.008 *	0.631	4.292
lnUKpop	−11.683	3.698	−3.16	0.002 *	−18.945	−4.420
lnOTHgdp	2.126	0.115	18.46	0.000 *	1.900	2.353
lnOTHpop	−1.277	0.120	−10.62	0.000 *	−1.514	−1.041
lnDISice	−1.793	0.0633	−28.32	0.000 *	−1.918	−1.669
_cons	147.335	38.047	3.87	0.000 *	72.617	222.052
R-squared	=0.7095					

* Significant at the 1 percent level.

In Table 4, the GDP variables are estimated to have significant positive effects on the exports from Iceland so that economic wealth is found to have negative effects on exports. Moreover, we find that it is not market size, in terms of population size, that is driving the exports from Iceland since both the population variables for Iceland and the countries importing from Iceland are estimated to have negative effects. Wealth and population effects can be interpreted such that per capita income has positive effects on exports. This is along the lines of research by Markusen (2013), with a discussion on putting per capita income back into trade theory. Moreover, distance is found to have negative effects on exports.

5. Summary and Conclusions

Is there a reason to expect the trade pattern of the United Kingdom to be different from that of small Iceland? We sought to analyze this with the usage of the gravity models within the setting of the new economic geography. For this analysis, we chose two countries who both are islands in the North Atlantic Ocean, which both have had to transport their exports further than just over the border, as common in the European Continent.

The two countries chosen for examination in this economical, geographic research are the United Kingdom, on the one hand, and Iceland on the other. Our approach includes using economic measures based on an OECD sample and geographical distance. We mix this with data on market size to explain the trade volume of two countries, the United Kingdom and Iceland.

We sought to analyze exports from the United Kingdom and Iceland over a period running from 1989 through 2012, and thus we covered the time of the world economic crisis. The beauty of the results found is manifold. We find exports to be negatively affected by geographical distance, indicating that exports are lower when the distance between countries increases.

First, when estimating the UK exports, we find the economic size of the importing countries to have the most positive effects on exports from the UK. Furthermore, the per capita effects of the importing countries are found to drive exports from the UK. However, the domestic economy of the UK, the UK GDP, and the UK population are not found to have positive effects on UK exports. Furthermore, distance is found to affect UK exports negatively. Second, we analyzed Iceland exports. When Iceland exports are considered with respect to wealth and population effects, we find the per capita income to have positive effects on the exports.

To sum up, our findings indicate that the economic size of the countries receiving the exports and the domestic economic size have positive effects on exports. Moreover, the distance is found to have negative effects on exports, with exports decreasing as distance increases. Therefore, we conclude that the receiving country's size and wealth determine

exports rather than a specific type of trade bloc membership. The reliability of our findings is based on an OECD sample. In further research, a larger sample could be used to increase reliability.

Author Contributions: Conceptualization, H.K.; methodology, H.K.; software, H.K. and G.K.Ó.; validation, G.K.Ó. and H.K.; formal analysis, G.K.Ó. and H.K; investigation, H.K. and G.K.Ó.; resources, H.K. and G.Ó; data curation, H.K.; writing—original draft preparation, H.K. and G.K.Ó.; writing—review and editing, H.K. and G.Ó; visualization, H.K. and G.K.Ó.; supervision, H.K. and G.K.Ó.; project administration, H.K. and G.K.Ó. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Publicly available datasets were analyzed in this study. This data can be found here: https://stats.oecd.org and http://www.indo.com/distance (accessed on 29 March 2021).

Conflicts of Interest: The author declares no conflict of interest.

References

Anderson, James E. 1979. A Theoretical Foundation for the Gravity Equation. *The American Economic Review* 69: 106–16.

Bergstrand, Jeffrey H. 1985. The Gravity Equation in International Trade: Some microeconomic Foundations and Empirical Evidence. *The Review of Economics and Statistics* 67: 474–81. [CrossRef]

Blonigen, Bruce A., Ronald B. Davies, and Keith Head. 2003. Estimating the Knowledge-Capital Model of the Multinational Enterprise: Comment. *American Economic Review* 93: 980–94. [CrossRef]

Brainard, S. Lael. 1997. An Empirical Assessment of the Proximity-Concentration Trade-off between Multinational Sales and Trade. *American Economic Review* 87: 520–44.

Davies, Roland B., and Helga Kristjánsdóttir. 2010. Fixed Costs, Foreign Direct Investment, and Gravity with Zeros. *Review of International Economics* 18: 47–62. [CrossRef]

Davies, Roland B., Delia Ionascu, and Helga Kristjánsdóttir. 2008. Estimating the Impact of Time-Invariant Variables on FDI with Fixed Effects. *Review of World Economics* 144: 381–407. [CrossRef]

Davies, Roland B., Hartmut Egger, and Peter Egger. 2010. Profit taxation and the mode of foreign market entry. *Canadian Journal of Economics-Revue Canadienne D Economique* 43: 704–27. [CrossRef]

Distance Calculator. 2018. How Far Is It. Available online: http://www.indo.com/distance (accessed on 9 March 2018).

EFTA. 2021. European Free Trade Association. Available online: http://www.efta.int (accessed on 2 February 2021).

EU. 2021. European Union. Available online: https://europa.eu/ (accessed on 2 February 2021).

Helpman, Elhanan, and Poul Krugman. 1989. *Market Structure and Foreign Trade. Increasing Returns, Imperfect Competition, and the International Economy*, Cambridge: MIT Press.

Hoechle, Daniel. 2007. Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence. *The Stata Journal* 7: 281–312. [CrossRef]

IMD. 2021. IMD Business School for Management and Leadership. Available online: http://www.imd.org (accessed on 2 February 2021).

IMF. 2018. Ragnarök: Iceland's Crisis, its Successful Stabilization Program, and the Role of the IMF. Poul M. Thomsen, Director, European Department, International Monetary Fund. Harpa Conference Center, Reykjavik. Available online: https://www.imf.org/en/News/Articles/2018/09/15/sp091518-ragnarok-iceland-s-crisis-its-successful-stabilization-program-and-the-role-of-the-imf (accessed on 2 February 2021).

IMF. 2021. International Monetary Fund. Available online: https://www.imf.org/ (accessed on 2 February 2021).

Keesing, Richard G. 1998. The history of Newton's apple tree. *Contemporary Physics* 39: 377–91. [CrossRef]

Kristjánsdóttir, Helga. 2004. Determinants of Exports and Foreign Direct Investment in a Small Open Economy. Doctoral thesis, University of Iceland, Sæmundargötu 2, 101 Reykjavík. Available online: https://skemman.is/handle/1946/23133 (accessed on 22 February 2021).

Kristjánsdóttir, Helga, and Fjóla Björk Karlsdóttir. 2020. UK foreign direct investment in the oecd, culture and geography. *Baltic Journal of Economic Studies* 6: 8–14. [CrossRef]

Kristjánsdóttir, Helga, and Sigríður Kristjánsdóttir. 2021. CarbFix and SulFix in geothermal production, and the Blue Lagoon in Iceland. *Baltic Journal of Economic Studies* 7: 1–8.

Krugman, Paul R. 1991. Increasing Returns and Economic Geography. *Journal of Political Economy* 99: 483–99. [CrossRef]

Krugman, Paul R., Maurice Obstfeld, and Marc Melitz. 2014. *International Economics: Theory and Policy*, 10th ed. Pearson Series in Economics; New York City: Pearson.

Larue, Bruno, and Joshua Mutunga. 1993. The gravity equation, market size, and black market exchange rates. *International Economic Journal* 7: 61–75. [CrossRef]

Markusen, James R. 2004. *Multinational Firms and the Theory of International Trade*. Cambridge: MIT Press.
Markusen, James R. 2013. Putting per-capita income back into trade theory. *Journal of International Economics* 90: 255–65. [CrossRef]
OECD. 2018. OECD Data. Available online: https://stats.oecd.org (accessed on 9 March 2018).
Oguledo, Victor, and Craig R. Macphee. 1994. Gravity models: A reformulation and an application to discriminatory trade arrangements. *Applied Economics* 26: 107–20. [CrossRef]
Pöyhönen, Peniti. 1963. A tentative model for the volume of trade between countries. *Weltwirtschaftliches Archiv* 90: 93–100.
Tinbergen, Jan. 1962. *Shaping the World Economy: Suggestions for an International Economic Policy*. New York: The Twentieth Century Fund.
World Bank. 2021. World Bank. Available online: https://www.worldbank.org/ (accessed on 2 February 2021).